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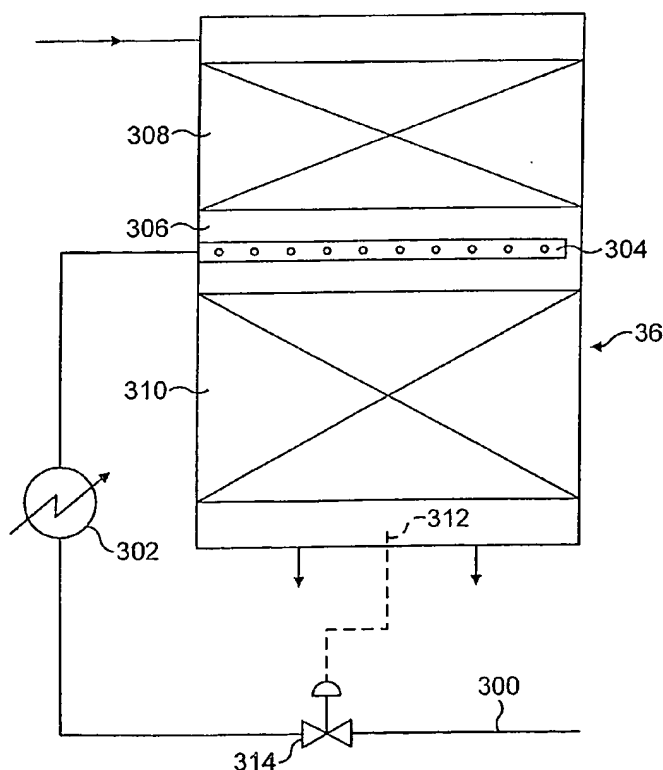
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[Continued on next page]

(54) Title: PROCESS FOR RECOVERING SULPHUR FROM A GAS STREAM CONTAINING HYDROGEN SULPHIDE



(57) Abstract: A feed gas stream containing hydrogen sulphide is subjected to Claus reaction in a Claus furnace (16). Oxygen or oxygen-enriched air containing at least 80 % by volume of oxygen is supplied to the furnace (16) to support combustion of the hydrogen sulphide. The ammonia is completely destroyed in the furnace (16). Sulphur vapour is condensed out of the resultant effluent gas in a sulphur condenser (30). The sulphur depleted effluent gas is subjected to a plurality of stages of catalytic reaction of hydrogen sulphide in order to form further sulphur vapour in catalytic reactors (36, 44) and (52) with the sulphur vapour being condensed out of the gas in sulphur condensers (38, 46) and (54). The sulphur dioxide content of the resulting tail gas is reduced to hydrogen sulphide in a reactor (60). Water vapour is condensed out of the reduced tail gas in a quench tower (64). A first portion of the water vapour depleted tail gas is recycled to the combustion region of the Claus furnace (16). A second portion is vented typically to an incinerator (80). Any excess gas in the first portion is introduced into an intermediate region of the most upstream (36) of the catalytic reactors (36, 44) and (52).

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